

## Lower Merion School District: Pennsylvania District Puts Alternately Fueled Buses to the Test

*EnergySmart School Close-Ups highlight schools and school districts that have found ways to use energy more wisely, lowering their energy bills and raising awareness of energy issues.*

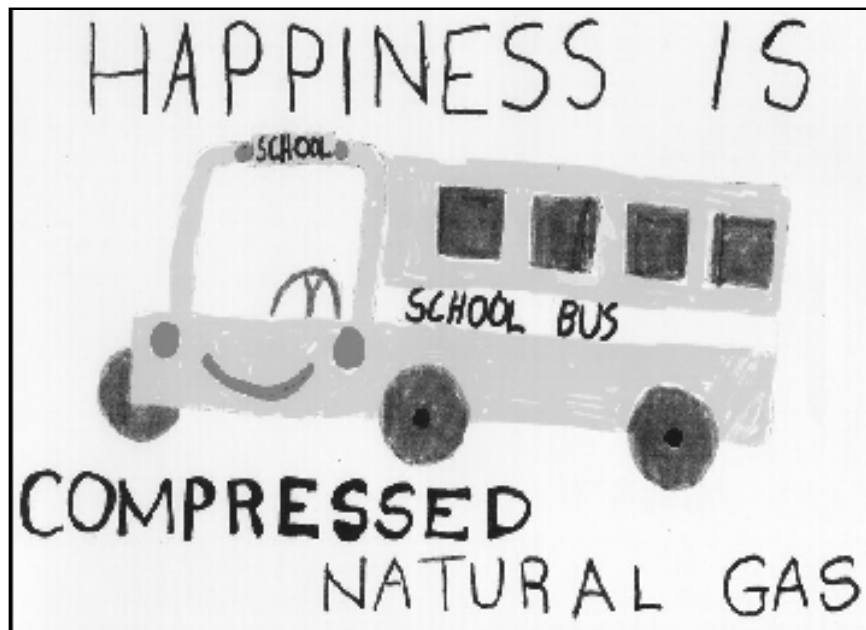
- ☐ Improving Existing Buildings
- ☐ Financing Building Improvements
- ☐ Operating and Maintaining Buildings
- ☐ Designing New Buildings
- ☐ Teaching and Learning
- ☐ Using Renewable Energy Technologies
- ☒ Using Alternately Fueled School Buses



### Addressing the community's concerns

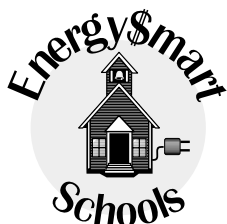
Lower Merion School District's entry into the alternatively fueled vehicle (AFV) arena dates back to the mid-1990s, when the local community raised concerns about noise and pollution from the district's diesel bus fleet.

Lower Merion's Transportation Department researched the issue and gathered information on funding opportunities. Compressed natural gas (CNG) emerged as the alternative fuel offering the best combination of economy, pollution reduction, and near-term product offerings. Since then, Lower Merion has purchased numerous CNG buses and enacted a vehicle replacement schedule that calls for all of its new buses to be CNG vehicles.



*Elementary school student David Faich won the grand prize in a poster contest among Philadelphia students.*

The district began its 2000-2001 school year with 63 CNG buses, comprising more than half its fleet. In all, these buses have logged more than three million miles, and the district has dispensed more than 600,000 gasoline-gallon-equivalents of natural gas. The district still adheres to its diesel bus maintenance schedule, but the CNG buses have shown clear oil—a sign of reduced pollution and longer engine life for the vehicles.



A Campaign of Rebuild America  
U.S. Department of Energy



## PROFILE:

Location:  
Ardmore, Pennsylvania

District size:  
6,474 students

Energy project scope:  
CNG and bi-fuel buses

Date completed:  
Ongoing

Dollars saved:  
Costs equivalent to  
diesel buses

Project funding:  
U.S. Department of  
Energy, Pennsylvania  
Department of  
Environmental Protec-  
tion's Alternative Fuel  
Incentive Grant  
Program, Greater  
Philadelphia Clean  
Cities Program

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## Compressed natural gas technology

Most of Lower Merion's AFV buses are powered by 8.1 liter CNG engines from Deere Power Systems Group. In fact, Lower Merion's use of these engines marked John Deere's entry into the AFV market. The buses themselves are manufactured by Blue Bird.

Each of the 72-passenger, rear-engine buses has four fuel cylinders with a total on-board capacity of 4,704 SCF (approximately 37 equivalent gallons). Their average fuel economy is 4.54 miles per gallon, with fuel costs at an average of 18.2 cents per mile—equivalent to their diesel counterparts. During a recent field trip, its CNG buses averaged 8.75 mpg over a 387-mile trek.

## Financing the change-over

To help offset the incremental cost of AFV buses and construction of CNG refueling infrastructure, Lower Merion obtained funding support from DOE and the Pennsylvania Department of Environmental Protection, through its Alternative Fuel Incentive Grant Program (AFIG). Since the purchase of the first bus in 1995, the district has received AFIG funds totaling over \$1,052,767 for both buses and CNG fueling stations. Since 1999, the district has received \$96,000 in funds from the new shuttle rebate program of the Greater Philadelphia Clean Cities Program.

For the 2001-2002 school year, Lower Merion will have 68 CNG buses in operation. Mike Andre, Director of Transportation, has also pursued the purchase of two CNG cargo vans for use in the building maintenance department.



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See the EnergySmart Schools Web site at:  
[www.eren.doe.gov/energysmartschools](http://www.eren.doe.gov/energysmartschools)

Or call the Energy Efficiency and  
Renewable Energy Clearinghouse (EREC)  
at: 1-800-DOE-3732